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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/607,807	06/30/2000	Akira Yamamoto	16869C-009300US	1045

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EXAMINER
TRAN, LAMBERT L

ART UNIT	PAPER NUMBER
2144	5

DATE MAILED: 02/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No. 09/607,807		Applicant(s) YAMAMOTO ET AL.
	Examiner Lambert L. Tran		Art Unit 2144

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *30 June 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-32* is/are rejected.

7)☒ Claim(s) *18-33* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 June 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

    a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

1.   This Action is in response to the application filed on 30 June 2000.

2.   Claims 1-32, presented for examination, are pending.

Priority

3.   No claim for priority has been made in this application.

Information Disclosure Statement

4.   The information disclosure statement (IDS) submitted on 30 June 2000 (paper #4) has

been considered by the Examiner (see attached PTO 1449).

Claim Objections

5.   The numbering of claims is not in accordance with 37 CFR 1.126 which requires the

original numbering of the claims to be preserved throughout the prosecution. When claims are

canceled, the remaining claims must not be renumbered. When new claims are presented, they

must be numbered consecutively beginning with the number next following the highest

numbered claims previously presented (whether entered or not).

6.   Claims 18-33 are misnumbered as the result of missing claim 17. Misnumbered claims

18-33 have been renumbered as 17-32.

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims 1-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sicola et al.,

U.S. Patent No 6,629,264, hereinafter referred to as Sicola, in view of Schulzrinne, H. et al.,

"Network Working Group, Request for Comments: 1889", hereinafter referred to as RFC 1889.

9.   In regard to claims 1, 10, Sicola disclosed a remote copy storage system comprising:

a first computer system having a first storage component; and

a second computer system having a second storage component,

the first and second storage components configured to exchange data over a data

network,

the first computer system having a memory that is configured with program code to write

a block of data to the first storage component and to transmit a data packet to the second

computer system,

the second computer system having a memory that is configured with program code to

receive data packets from the first computer system,

wherein blocks of data written on the first storage component are written on the second

storage component in the same order as on the first storage component [see Sicola, Figure 3, col.

8, lines 4-11, col. 6, lines 56-58]. However, Sicola did not disclose *the data packet including the*

block of data, a time stamp, and a sequence number.

10.   In the same field of data delivery and network transport [see RFC 1889, ABSTRACT],

RFC 1889 disclosed a real-time transport protocol (RTP) for data packet header that contains *a*

time stamp, and a sequence number [see RFC 1889, Page 9, Section 5.1]. An ordinary artisan in

the art at the same time the invention was made, would have been motivated to look for various

protocols to implement Sicola's remote copy storage system to sustain full synchronization in an

asynchronous data transmission as suggested by Sicola in Column 6, lines 52-58.

11.   Accordingly, it would have been obvious to one of ordinary skill in the network storage

art at the time the invention was made to have incorporated the RTP protocol in Sicola's remote

copy storage system for the Internet data transmission environment, since the Internet, like other

packet networks, occasionally loses and reorders packets and delays them by variable amounts of

time [see RFC 1889, Page 5, third paragraph, and Sicola, col. 7, lines 55-64].

12.   In regard to claims 2, 12, RFC 1889 disclosed: *limit time stamp from among the time*

stamps in the sender report header in section 6.3.1. Note the different timestamp fields allocated

in the header. Also see Sicola, Col. 9, lines 55-67 about the 'heartbeat' timer.

13.   In regard to claims 3-5, 18-21, Sicola disclosed: *the data network is a connectionless*

network, unable to guarantee that data packets will be received in the same order as they were

sent, asynchronously (Internet protocol) [see Sicola, col. 7, lines 55-64], *the data network is a*

wide area network [see Sicola, col.7, lines 51-52].

14.   In regard to claims 6-9, 15-17, Sicola disclosed: *the first storage component comprises*

plural first data storage units, and the second storage component comprises plural second data

storage units, each of the first data storage units corresponding to one of the second data

storage units, wherein data stored on one of the first data storage units is also stored on the

corresponding second data storage unit;

The first storage component comprises plural first disk systems and the second storage

component comprises plural second disk systems, each first disk system being associated with

one or more of the second disk systems, wherein data stored in one of the first disk systems is

also stored on the associated one or more of the second disk systems;

Each of the first disk systems comprises plural first disk units and each of the second disk

systems comprise plural second disk units, each of the first disk units being associated with one

of the second disk units

Each first disk unit is associated with one of the second disk units independently of the first disk

system to which the first disk unit belongs [see Sicola, Figure 3, col. 8, lines 12-48].

15.   In regard to claim 11, RFC 1889 disclosed on Page 10: *"The sequence number*

increments by one for each RTP data packet sent, and may be used by the receiver to detect

packet loss and to restore packet sequence."

16.   In regard to claims 13-14, 22-29, the combination RFC 1889 and Sicola disclosed: *the*

local data store comprises plural local disk units and the remote data store comprises plural

remote disk units, each local disk unit being paired with one of the remote disk units to define a

remote copy pair; writing plural blocks of data to the local disk units and sending plural data

packets to the remote disk units so that each remote disk unit has a list of sequence numbers from

its associated plural data packets, sequence number selection, [see Sicola, col. 8, lines 52-67,

and Figure 3,4, col. 9, lines 55-67, col. 12, lines 44-59]. Also see the RTP header in section 5.1

and section 6.3.1 about "highest sequence number".

17.   As per claims 30-32, regarding *magnetic tape storage system,* Sicola disclosed *device*

Services layer 525, which handles the physical I/O to external devices [see Sicola, Figure 5, col.

9, lines 31-34].

18.   Since all the claims limitations are taught by the combination of RFC 1889 and Sicola's

invention, claims 1-32 are rejected.

Conclusion

19.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

a.   Xie et al., U.S. Patent 6,662,213, disclosed system and method for ensuring

delivery of a single communication between nodes.

b.   Wahl et al., U.S. Patent 6,324,654, disclosed computer network remote data

mirroring system.

c.   Connelly et al., U.S. Patent 6,594,786, disclosed fault tolerant high availability

meter.

d.   West et al., U.S. Patent 6,446,175, disclosed storing and retrieving data on tape

backup system located at remote storage system site.

e.   Crockett et al., U.S. Patent 6,301,643, disclosed multi-environment data

consistency.

f.   Burton et al., U.S. Patent 6,526,419, disclosed method, system and program for

remote copy in an open systems environment.

20.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Lambert L. Tran whose telephone number is (703) 305-4663.

The examiner can normally be reached on M-F at 9AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Jack B Harvey can be reached on (703) 305-9705. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

o

L.L.T
Assistant Examiner
GAU 2144
February 4, 2004

JACK B. HARVEY
SUPERVISORY PATENT EXAMINER